

CLAIMS

1. Method of assembling the elements of a structure based on a plastic transparent to laser radiation, comprising a cellular honeycomb core and two skins on either side of the core, perpendicular to the walls of the cells, in which
5 at least one of the skins and the core are assembled by welding using laser radiation, and at least one of the elements to be assembled comprises, in the vicinity of at least one part of its surface, a layer that at least partly absorbs the laser radiation, the welding taking place by the melting of this layer by means of the laser radiation in the weld zones.
- 10 2. Method according to the preceding claim, characterized in that the plastic is a PP or a PVC.
3. Method according to either of the preceding claims, characterized in that the elements to be welded by means of the laser radiation further include the cells of the core and in that the latter is obtained by the thermoforming and
15 folding of a plastic sheet, the laser-radiation-absorbent layer of which is located on either side of this sheet.
4. Method according to any one of the preceding claims, characterized in that the core is obtained by a continuous manufacturing process and in that the welding of the skins by means of the laser radiation takes place in line with this
20 manufacturing process.
5. Method according to the preceding claim, characterized in that the continuous process for manufacturing the core is an extrusion process and in that the laser-radiation-absorbent layer is located on only one face of each of the two skins.
- 25 6. Method according to Claim 4, characterized in that the continuous process for manufacturing the core is a process involving the thermoforming and folding of a sheet that includes, on either side, the laser-radiation-absorbent layer in order to form unwelded cells, and in that the unwelded cells are assembled by welding using the laser radiation and in that the two skins do not contain the
30 radiation-absorbent layer.

7. Method according to Claim 4, characterized in that the continuous process for manufacturing the core is a process involving the thermoforming and folding of a sheet in order to form unwelded cells, in that the cells remain unwelded but are optionally assembled by bonding using a solvent-free adhesive applied by coating the surface of the sheet in the zones to be bonded and in that the laser-radiation-absorbent layer is located on only one face of each of the two skins.

8. Method according to any one of the preceding claims, characterized in that the skins are uniaxially or biaxially oriented.